Paint Test Equipment

Dewpoint Meter

Surface Cleanliness

Dewpoint Meter

Information

ISO 8502-4: Preparation of steel substrates before application of paints and related products. Tests for the assessment of surface cleanliness. Part 4: Guidance on the estimation of the probability of condensation prior to paint application.

The Dewpoint Meter enables testing for the estimation of the probability of condensation on a surface to be painted and establishing whether conditions are suitable for painting or not.

The steel surface temperature generally should be at least 3°C above the dew point when paints are applied. Below this temperature the Dewpoint Meter will sound an alarm and the display colour will change to warn you that the surface conditions are not suitable too paint.

Measurements of relative humidity, dew point, air temperature are shown. Surface temperature and surface temperature proximity to dew point are shown when using the surface temperature sensor.

Interchangeable Humidity Sensor and Surface Temperature Probe allow the user to replace damaged or out-of-calibration-date Sensor and Probe.

The Calibration Certificates with traceability to UKAS are an optional extra. The Certificates are supplied as hard copy and are available online through the Calibration Management Cloud (under Calibration) on our website.

Supplied in an industrial foam-filled Carrying Case with a Humidity Sensor and Surface Temperature Probe.

Dewpoint Meter

Dewpoint Meter Specifications

Part No	Range %rh	Range Temperature	Resolution %rh	Resolution Temp	Accuracy %rh/Temp	Accuracy Temp	Humidity Sensor Cal Cert Part No	Surface Temp Probe Cert Part No
H4001	1–100%	Air -10–70°C (14–160°F) Surface -20–80°C (-4–176°F)	0.1%	0.1°C 0.2°F	10–90% ±2% 0–10/90–100% ±3%	±1%	NH101	NH102
HS301	Spare Humidity Sensor 0–100%rh/-10 to 70°C (14 to 160°F)						NH101	
HS302	Spare Surface Temperature Probe -20 to 80°C (-4 to 176°F)							NH102

Dewpoint Meter Operation

General

Switch On/Off

Switch the Dewpoint Meter on by pressing the On button. To switch off, press and hold the button until the display shows DEVICE IS SWITCHING OFF. Alternatively, the instrument will switch itself off after a period that the Auto Off is set to under the Setting Menu Functions.

Infra Red Thermometer

The Dewpoint Meter has a built in infra red thermometer for measuring surface temperature.

Remove the rubber cap from the infra red sensor and point at the substrate. Press the infra red temperature button (IRT) and the Surface Temperature Difference (difference between surface temperature and dewpoint), Surface Temperature and Air Dewpoint measurements will show on the display.

If you press the infra red temperature button (IRT) twice the laser sight will activate.

The infra red thermometer is not suitable for measuring on reflective substrates. This includes blast-cleaned steel. For blast-cleaned steel use the Surface Temperature Probe.

Pause Readings

Measurements on the display can be paused by pressing the right arrow button.

Practical Advice

When using the Dewpoint Meter it is good practice to monitor the display for temperature stability.

The Humidity Sensor should be given sufficient time to equilibrate with the environment to be measured. The larger the initial temperature difference between the Sensor and the environment to be measured, the more time temperature equilibration requires to provide a valid measurement.

Replacing Batteries

The battery status is shown at the top right of the display. Replace the batteries immediately when one bar is shown or the symbol is flashing.

To replace, remove the screw then the cover located on the rear of the instrument. Replace with an alkaline PP3 battery, ensuring correct polarity.

Dewpoint Meter Operation

Menu

All functions are accessed through a menu-driven display by pressing the left button. To scroll through the menus use the up and down arrow buttons and enter by briefly pressing the on button.

To exit from the menu, press the left Menu button again and the Dewpoint Meter will revert back to normal measurement mode.

Hygrometer Menu Function

The Hygrometer Menu Function shows the Relative Humidity and Air Temperature on the display.

Dewpoint Meter Operation

Psychometrics Menu Functions

Dew Point

Dew Point, Relative Humidity and Air Temperature are shown on the display.

Grams Per Kilogram

Grams Per Kilogram, Relative Humidity and Air Temperature are shown on the display.

Enthalpy

Enthalpy, Relative Humidity and Air Temperature are shown on the display.

Vapour Pressure

Vapour Pressure, Relative Humidity and Air Temperature are shown on the display.

Custom

This Menu Function will allow you to display the customised measurements.

Dewpoint Meter Operation

Surface Temperature Function

When the Dewpoint Meter is used in conjunction with the Surface Temperature Probe you can ensure that there is no moisture on the blast-cleaned steel before painting.

When the surface Probe is placed on the steel substrate the Surface Temperature Difference measurement must be over 3°C to ensure that there is no moisture on the steel before painting.

If the Surface Temperature Difference measurement is under 3°C the green background will change to amber, flash and sound an alarm as a warning not to paint. If the Surface Temperature Difference measurement falls below 0°C the amber background will change to red.

The Surface Temperature Difference is also referred to as a delta T reading in some specifications.

The Surface Temperature can also be measured using the infra red thermometer built into the instrument.

Remove the rubber cap from the infra red sensor and point at the substrate. Press the infra red temperature button (IRT) and the measurements will show on the display.

Plug the Surface Temperature Probe into the socket on the side of the Dewpoint Meter.

The display will show the Surface Temperature Difference (difference between surface temperature and dewpoint), Surface Temperature and Air Dewpoint.

If you press the infra red temperature button (IRT) twice the laser sight will activate.

The infra red thermometer is not suitable for measuring on reflective substrates. This includes blast-cleaned steel.

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The display will show the Surface Temperature Difference (difference between surface temperature and dewpoint), Surface Temperature and Air Dewpoint.

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Dewpoint Meter Operation

Settings Menu Functions

Language

Language options of English, Norwegian, French, German, Swedish, Spanish, Italian and Dutch can be selected by using the up and down arrows. When selected press the On button to save.

Units

Metric or imperial measurements can be selected by using the up and down arrows. When selected press the On button to save.

Custom

Customise the display with up to four different measurement types by using the up and down arrows. When selected press the On button to save. When Custom is selected under the Psychometrics Menu Function the display will show the selected measurement types.

Date and Time

Set the Date and Time so when readings are stored for download to a PC the downloaded readings will show the date and time.

Select the Date by using the up and down arrows to change numbers and the side arrows to move through the numbers, then press the On button and the display will allow you to set the Time using the same arrow buttons. When selected press the On button to save.

Auto Off

Select the number of minutes for the instrument to automatically switch off by using the up and down arrows. When selected press the On button to save.

Brightness

Select the display brightness by using the up and down Arrows. When selected press the On button to save.

Buzzer

Select the buzzer to be on or off. When selected press the On button to save.

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Dewpoint Meter Operation

Settings Menu Functions Continued

Calibration

This function is for Paint Test Equipment use only.

Logging

The logging will allow you to set a logging period and a job number so that measurements can be stored for PC
download.

Select the Start and Stop by using the up and down arrows to change numbers and the side arrows to move through the numbers, then press the On button and the display will allow you to set the Log Interval and Job Number using the same arrow buttons. When selected press the On button to save.

The memory can be cleared from all measurements by selecting Clear Data using the up and down arrows. When selected press the On button to clear.

USB Connection

Measurements can be stored in the memory by pressing the right arrow button for one second until RECORD SAVED appears.

Select File Viewer by using the up and down arrows. When selected press the On button to save. All stored measurements can be download-ed to a computer directly into Excel.

Connection is made using the optional USB PC Download Cable to the download socket on the Dewpoint Meter and the USB port on the computer. Ensure the Dewpoint Meter is switched off when connecting the cable.

Switch the Dewpoint Meter on and USB Connected will show on the display. Locate the HygroMaster storage device on the computer and view the files.

When stored readings are in Excel using the Surface Temperature Probe Function the results are shown as follows:

Measurement 1: Surface Temperature
Measurement 2: Air Dewpoint
Measurement 3: Surface Temperature Difference

The memory can be cleared from all measurements by selecting Clear Data under the Logging Menu Feature.

About Us

Paint Test Equipment is a global leader in the manufacture of specialist test equipment specifically for the industrial painting and coating industries for the protection of steel assets from corrosion, mainly in the oil, renewables and steel construction sectors. We have over 30 years experience and extensive knowledge in delivering practical solutions in supporting our customers with world class products for corrosion prevention.

Prevention of corrosion on steel is essential to extend the asset lifetime, optimise performance and minimise downtime for expensive maintenance work. Using Paint Test Equipment products ensures that industrial coatings are applied to the highest achievable quality standards of ISO compliance.

We supply small, medium and multinational companies with the full range of technologies and innovations in our unrivalled portfolio of products for our customers to grow their business and enhance profits through cost effective corrosion management equipment.

Paint Test Equipment is committed to providing proactive and innovative solutions to meet customer requirements for the highest quality, user friendly inspection equipment. Paint Test Equipment is the partner of choice.

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